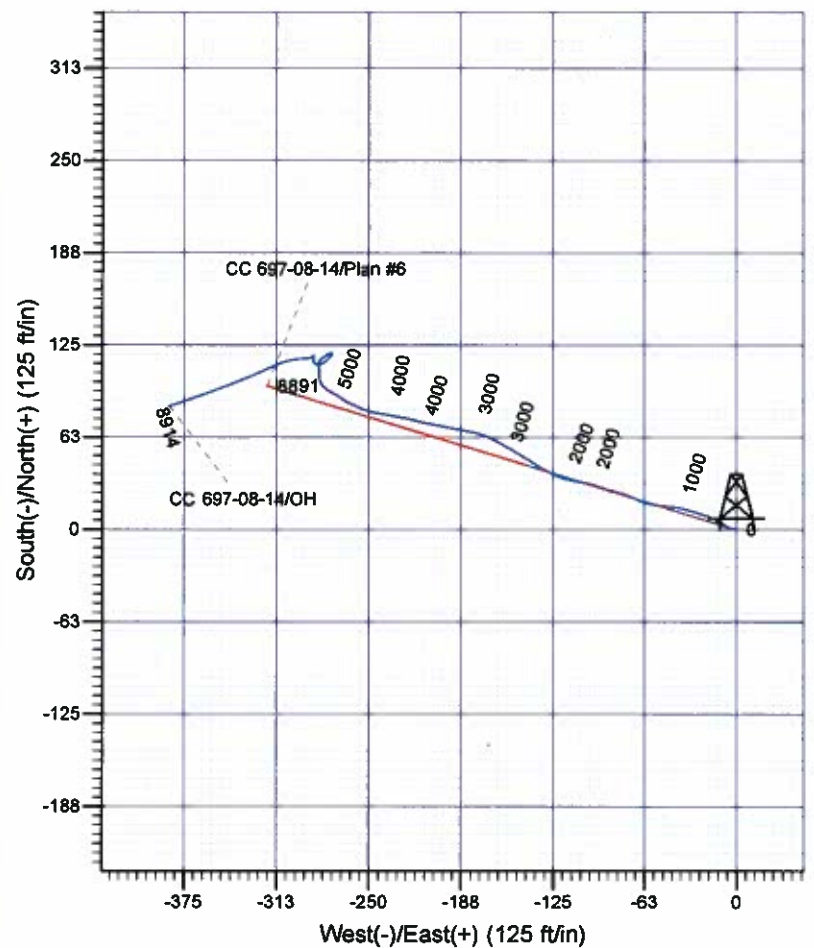
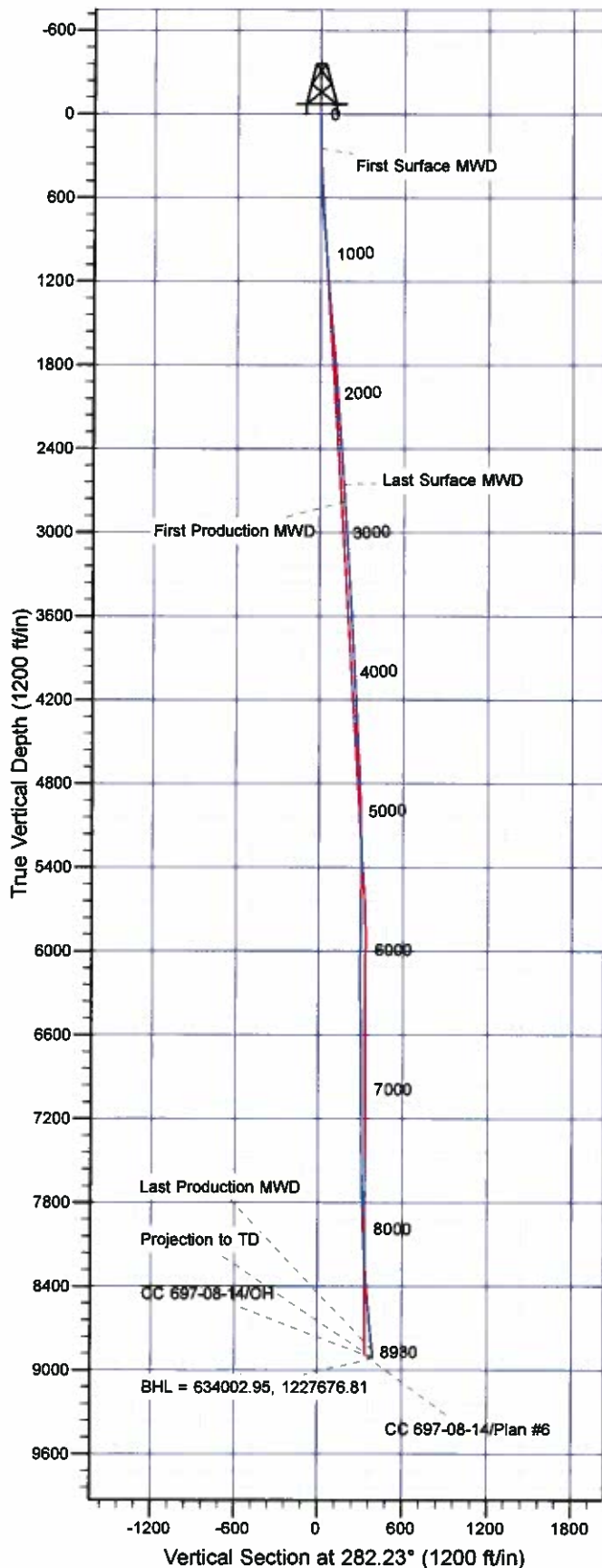




**Scientific Drilling**  
Rocky Mountain Operations

Company: OXY USA RMAT  
Project: Garfield County, CO NAD27  
Site: Cascade Creek 608-41 Pad  
Well: CC 697-08-14  
Wellbore: OH  
Design: OH



Well Details: CC 697-08-14

TVD Reference: GL 8407' & RKB 30' @ 8437.00ft (H&P) Level: 8407.00						Slot
+N/-S	+E/-W	North	Easting	Latitude	Longitude	J
0.00	0.00	633907.93	1228059.18	39° 32' 31.070 N	108° 14' 15.234 W	

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-08-14 - Slot J, True North  
Vertical (TVD) Reference: GL 8407' & RKB 30' @ 8437.00ft (H&P)  
Section (VS) Reference: Slot - J(0.00N, 0.00E)  
Measured Depth Reference: GL 8407' & RKB 30' @ 8437.00ft (H&P)  
Calculation Method: Minimum Curvature

#### PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: Colorado Central 502

System Datum: Mean Sea Level

Plan: OH

9:42, April 13 2011  
Created By: Janie Cooke

# **OXY USA RMAT**

**Garfield County, CO NAD27**

**Cascade Creek 608-41 Pad**

**CC 697-08-14 - Slot J**

**OH**

**Design: OH**

## **Standard Survey Report**

**13 April, 2011**

# Scientific Drilling International, Inc.

## Survey Report

<b>Company:</b>	OXY USA RMAT	<b>Local Co-ordinate Reference:</b>	Well CC 697-08-14 - Slot J
<b>Project:</b>	Garfield County, CO NAD27	<b>TVD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Site:</b>	Cascade Creek 608-41 Pad	<b>MD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Well:</b>	CC 697-08-14	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM-R5000-JanieCooke-Local

<b>Project</b>	Garfield County, CO NAD27		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado Central 502		

Site	Cascade Creek 608-41 Pad, Section 8 T6S R97W				
Site Position:		Northing:	633,966.95 usft	Latitude:	39° 32' 31.685 N
From:	Map	Easting:	1,228,168.67 usft	Longitude:	108° 14' 13.859 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.73 °

Well	CC 697-08-14 - Slot J					
Well Position	+N-S	0.00 ft	Northing:	633,907.93 usft	Latitude:	39° 32' 31.070 N
	+E-W	0.00 ft	Easting:	1,228,059.18 usft	Longitude:	108° 14' 15.234 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,407.00 ft

<b>Wellbore</b>	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/15/2008	10.80	65.80	52,494

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)	
	0.00	0.00	0.00	282.23	

<b>Survey Program</b>	<b>Date</b>	4/13/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
248.00	2,665.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,787.00	8,930.00	Survey #2 - Production MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
248.00	0.58	279.19	248.00	0.20	-1.24	1.25	0.23	0.23	0.00
<b>First Surface MWD</b>									
340.00	0.24	266.58	339.99	0.26	-1.89	1.90	0.38	-0.37	-13.71
432.00	2.20	286.27	431.97	0.75	-3.78	3.85	2.15	2.13	21.40
523.00	3.13	302.15	522.87	2.56	-7.56	7.93	1.30	1.02	17.45
615.00	4.13	302.91	614.68	5.69	-12.47	13.39	1.09	1.09	0.83
707.00	4.66	289.91	706.42	8.77	-18.76	20.19	1.22	0.58	-14.13
801.00	4.84	286.39	800.09	11.19	-26.16	27.93	0.36	0.19	-3.74
895.00	5.19	285.66	893.73	13.47	-34.05	36.13	0.38	0.37	-0.56

# Scientific Drilling International, Inc.

## Survey Report

<b>Company:</b>	OXY USA RMAT	<b>Local Co-ordinate Reference:</b>	Well CC 697-08-14 - Slot J
<b>Project:</b>	Garfield County, CO NAD27	<b>TVD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Site:</b>	Cascade Creek 608-41 Pad	<b>MD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Well:</b>	CC 697-08-14	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM-R5000-JanieCooke-Local

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Bulld Rate (°/100ft)	Turn Rate (°/100ft)
990.00	3.61	276.99	988.45	15.01	-41.15	43.40	1.81	-1.66	-9.34
1,084.00	4.04	276.37	1,082.24	15.73	-47.38	49.64	0.46	0.46	-0.66
1,179.00	4.57	276.81	1,176.97	16.55	-54.47	56.74	0.56	0.56	0.46
1,273.00	4.40	288.24	1,270.89	18.13	-61.61	64.05	0.97	-0.18	12.16
1,368.00	4.66	294.56	1,365.39	20.87	-68.58	71.44	0.59	0.27	6.65
1,462.00	5.19	288.24	1,459.04	23.79	-76.09	79.40	0.81	0.56	-6.72
1,557.00	6.07	284.63	1,553.59	26.40	-85.03	88.69	1.00	0.93	-3.80
1,652.00	4.48	289.12	1,648.18	28.89	-93.40	97.40	1.73	-1.67	4.73
1,746.00	4.40	282.79	1,741.90	30.89	-100.38	104.65	0.53	-0.09	-6.73
1,841.00	4.40	281.82	1,836.62	32.44	-107.50	111.94	0.08	0.00	-1.02
1,935.00	4.66	279.27	1,930.33	33.79	-114.80	119.35	0.35	0.28	-2.71
2,030.00	4.13	296.41	2,025.05	35.94	-121.67	126.53	1.48	-0.56	18.04
2,124.00	3.61	295.79	2,118.83	38.73	-127.37	132.68	0.55	-0.55	-0.66
2,219.00	3.78	299.84	2,213.64	41.59	-132.78	138.58	0.33	0.18	4.26
2,313.00	4.22	302.12	2,307.41	44.97	-138.40	144.78	0.50	0.47	2.43
2,408.00	4.04	304.67	2,402.16	48.73	-144.11	151.16	0.27	-0.19	2.68
2,502.00	4.31	298.78	2,495.91	52.32	-149.93	157.61	0.54	0.29	-6.27
2,597.00	3.96	298.78	2,590.67	55.61	-155.93	164.17	0.37	-0.37	0.00
2,665.00	3.87	298.61	2,658.51	57.84	-160.01	168.63	0.13	-0.13	-0.25
<b>Last Surface MWD</b>									
2,787.00	2.96	298.10	2,780.29	61.30	-166.40	175.61	0.75	-0.75	-0.42
<b>First Production MWD</b>									
2,881.00	4.13	289.55	2,874.11	63.58	-171.73	181.30	1.36	1.24	-9.10
2,976.00	4.22	284.90	2,968.86	65.62	-178.33	188.18	0.37	0.09	-4.89
3,070.00	3.78	277.07	3,062.63	66.89	-184.75	194.72	0.75	-0.47	-8.33
3,165.00	3.69	280.33	3,157.43	67.82	-190.86	200.90	0.24	-0.09	3.43
3,260.00	3.52	283.49	3,252.24	69.05	-196.71	206.87	0.28	-0.18	3.33
3,354.00	3.25	281.73	3,346.07	70.27	-202.12	212.42	0.31	-0.29	-1.87
3,449.00	3.34	280.15	3,440.92	71.30	-207.48	217.88	0.13	0.09	-1.66
3,543.00	2.90	280.24	3,534.78	72.21	-212.52	222.99	0.47	-0.47	0.10
3,638.00	4.04	285.78	3,629.60	73.54	-218.10	228.73	1.25	1.20	5.83
3,732.00	3.43	283.40	3,723.40	75.10	-224.03	234.85	0.67	-0.65	-2.53
3,826.00	3.25	278.48	3,817.24	76.14	-229.40	240.32	0.36	-0.19	-5.23
3,921.00	3.34	282.08	3,912.09	77.12	-234.77	245.77	0.24	0.09	3.79
4,015.00	3.08	278.22	4,005.94	78.05	-239.94	251.03	0.36	-0.28	-4.11
4,110.00	3.17	280.68	4,100.80	78.90	-245.05	256.20	0.17	0.09	2.59
4,205.00	2.99	284.63	4,195.66	80.02	-250.03	261.30	0.29	-0.19	4.16
4,299.00	2.55	293.07	4,289.55	81.45	-254.32	265.81	0.64	-0.47	8.98
4,394.00	2.99	297.64	4,384.44	83.43	-258.46	270.27	0.52	0.46	4.81
4,488.00	2.73	290.61	4,478.32	85.36	-262.73	274.85	0.46	-0.28	-7.48
4,583.00	3.25	307.48	4,573.19	87.79	-266.99	279.52	1.07	0.55	17.76
4,677.00	3.08	300.01	4,667.05	90.68	-271.29	284.34	0.47	-0.18	-7.95
4,772.00	2.90	298.78	4,761.92	93.11	-275.60	289.07	0.20	-0.19	-1.29



# Scientific Drilling International, Inc.

## Survey Report

<b>Company:</b>	OXY USA RMAT	<b>Local Co-ordinate Reference:</b>	Well CC 697-08-14 - Slot J
<b>Project:</b>	Garfield County, CO NAD27	<b>TVD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Site:</b>	Cascade Creek 606-41 Pad	<b>MD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Well:</b>	CC 697-08-14	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM-R5000-JanieCooke-Local

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,866.00	3.08	310.82	4,855.79	95.91	-279.60	293.57	0.69	0.19	12.81
4,961.00	2.29	333.41	4,950.69	99.27	-282.38	297.00	1.37	-0.83	23.78
5,055.00	1.67	357.85	5,044.64	102.32	-283.27	298.52	1.10	-0.66	26.00
5,150.00	1.58	359.16	5,139.60	105.01	-283.34	299.16	0.10	-0.09	1.38
5,244.00	1.41	358.90	5,233.57	107.46	-283.38	299.72	0.18	-0.18	-0.28
5,339.00	1.49	358.90	5,328.54	109.87	-283.43	300.27	0.08	0.08	0.00
5,433.00	1.49	354.95	5,422.50	112.31	-283.56	300.91	0.11	0.00	-4.20
5,528.00	1.14	42.41	5,517.48	114.24	-283.03	300.81	1.16	-0.37	49.96
5,622.00	1.14	52.18	5,611.46	115.50	-281.66	299.74	0.21	0.00	10.37
5,717.00	1.06	58.93	5,706.45	116.53	-280.16	298.49	0.16	-0.08	7.13
5,811.00	0.97	52.25	5,800.43	117.47	-278.79	297.35	0.16	-0.10	-7.11
5,906.00	1.06	49.79	5,895.42	118.53	-277.48	296.29	0.11	0.09	-2.59
6,001.00	1.06	68.69	5,990.40	119.41	-275.99	295.02	0.37	0.00	19.89
6,095.00	0.53	131.26	6,084.39	119.44	-274.86	293.92	1.00	-0.56	66.56
6,190.00	1.49	210.37	6,179.38	118.09	-275.15	293.92	1.56	1.01	83.27
6,284.00	1.93	221.00	6,273.34	115.84	-276.81	295.06	0.58	0.47	11.31
6,379.00	2.02	233.48	6,368.28	113.64	-279.20	296.94	0.46	0.09	13.14
6,473.00	1.14	250.09	6,462.25	112.33	-281.41	298.82	1.05	-0.94	17.67
6,568.00	1.23	245.96	6,557.23	111.59	-283.23	300.44	0.13	0.09	-4.35
6,662.00	0.88	299.13	6,651.21	111.53	-284.78	301.95	1.06	-0.37	56.56
6,757.00	1.23	296.94	6,746.20	112.35	-286.33	303.63	0.37	0.37	-2.31
6,851.00	1.06	0.13	6,840.18	113.68	-287.23	304.79	1.29	-0.18	67.22
6,946.00	0.97	8.30	6,935.16	115.35	-287.11	305.03	0.18	-0.09	8.60
7,040.00	0.97	340.97	7,029.15	116.89	-287.26	305.50	0.49	0.00	-29.07
7,135.00	0.26	59.19	7,124.15	117.76	-287.33	305.76	1.00	-0.75	82.34
7,229.00	0.26	169.67	7,218.15	117.66	-287.11	305.52	0.45	0.00	117.53
7,324.00	0.62	226.80	7,313.14	117.10	-287.45	305.73	0.55	0.38	60.14
7,418.00	1.14	247.37	7,407.13	116.39	-288.68	306.78	0.64	0.55	21.88
7,513.00	0.53	257.12	7,502.12	115.93	-289.98	307.96	0.66	-0.64	10.26
7,607.00	0.88	265.82	7,596.11	115.78	-291.12	309.04	0.39	0.37	9.26
7,702.00	1.32	269.16	7,691.10	115.71	-292.95	310.81	0.47	0.46	3.52
7,796.00	1.76	264.68	7,785.06	115.56	-295.47	313.24	0.48	0.47	-4.77
7,891.00	2.20	264.33	7,880.01	115.25	-298.73	316.37	0.46	0.46	-0.37
7,984.00	2.55	257.74	7,972.93	114.63	-302.53	319.95	0.48	0.38	-7.09
8,079.00	3.25	252.73	8,067.80	113.36	-307.17	324.21	0.78	0.74	-5.27
8,173.00	3.96	245.96	8,161.62	111.27	-312.68	329.15	0.88	0.76	-7.20
8,267.00	4.13	246.05	8,255.38	108.57	-318.73	334.50	0.18	0.18	0.10
8,362.00	4.75	245.96	8,350.10	105.58	-325.45	340.43	0.65	0.65	-0.09
8,456.00	5.63	247.89	8,443.71	102.26	-333.28	347.38	0.95	0.94	2.05
8,551.00	6.86	248.07	8,538.15	98.39	-342.86	355.92	1.29	1.29	0.19
8,645.00	6.95	250.79	8,631.46	94.42	-353.44	365.42	0.36	0.10	2.89
8,739.00	6.95	250.53	8,724.77	90.65	-364.17	375.11	0.03	0.00	-0.28
8,834.00	6.68	250.18	8,819.10	86.86	-374.79	384.88	0.29	-0.28	-0.37
8,874.00	6.42	252.03	8,858.84	85.36	-379.10	388.59	0.84	-0.65	4.63

# Scientific Drilling International, Inc.

## Survey Report

<b>Company:</b>	OXY USA RMAT	<b>Local Co-ordinate Reference:</b>	Well CC 697-08-14 - Slot J
<b>Project:</b>	Garfield County, CO NAD27	<b>TVD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Site:</b>	Cascade Creek 608-41 Pad	<b>MD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Well:</b>	CC 697-08-14	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM-R5000-JanieCooke-Local

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>Last Production MWD</b>									
8,930.00	6.42	252.03	8,914.49	83.45	-385.06	394.00	0.00	0.00	0.00
<b>Projection to TD - BHL = 634002.95, 1227676.81</b>									

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
248.00	248.00	0.20	-1.24	First Surface MWD
2,665.00	2,658.51	57.84	-160.01	Last Surface MWD
2,787.00	2,780.29	61.30	-166.40	First Production MWD
8,874.00	8,858.84	85.38	-379.10	Last Production MWD
8,930.00	8,914.49	83.45	-385.06	Projection to TD
8,930.00	8,914.49	83.45	-385.06	BHL = 634002.95, 1227676.81

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_